

FORM PTO-1390  
(REV 10-95)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. §371**

ATO CM 252

U.S. APPLICATION NO. (If known, see 37 CFR §1.5)

**10/049463**

INTERNATIONAL APPLICATION NO.

INTERNATIONAL FILING DATE

PCT/FR00/02136

25 JULY 2000

PRIORITY DATE CLAIMED

29 JULY 1999

TITLE OF INVENTION

METHOD FOR MAKING METHYL ETHYL KETONE CYANOHYDRIN

APPLICANT(S) FOR DO/EO/US


CROIZY, Jean-Francois, et al

**Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:**

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. §371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. §371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. §371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. §371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19<sup>th</sup> month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. §371(c)(2))
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. §371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. §371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. §371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. §371(c)(5)).

**Items 11. to 16. below concern document(s) or information included:**

11. ☐ An Information Disclosure Statement under 37 C.F.R. §§1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. §§3.28 and 3.31 is included.
13. ☐ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

U.S. APPLICATION NO. (if known, see 37 CFR §1.5) <div style="font-size: 1.5em; font-weight: bold;">10/049463</div>		INTERNATIONAL APPLICATION NO. PCT/FR00/02136		ATTORNEY'S DOCKET NUMBER ATOCM 252	
17. <input checked="" type="checkbox"/> The following fees are submitted:  <b>BASIC NATIONAL FEE ( 37 CFR §1.492 (a) (1) - (5)):</b>  Search Report has been prepared by the EPO or JPO..... \$890.00  International preliminary examination fee paid to USPTO (37 CFR §1.482)..... \$710.00  No international preliminary examination fee paid to USPTO (37 CFR §1.482) but international search fee paid to USPTO (37 CFR §1.445(a)(2))..... \$740.00  Neither international preliminary examination fee (37 CFR §1.482) nor international search fee (37 CFR §1.445(a)(2)) paid to USPTO..... \$1040.00  International preliminary examination fee paid to USPTO (37 CFR §1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)..... \$100.00  <div style="text-align: right;"><b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b></div>				<b>CALCULATIONS</b> PTO USE ONLY          <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between;"><span>\$890.00</span><span></span></div> </div>	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. §1.492(e)).					
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	10 - 20 =	0	x \$ 18.00	\$0.00	
Independent claims	1 - 3 =	0	x \$ 84.00	\$0.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$ 280.00		
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$890.00	
Reduction of 1/2 for filing by small entity, if applicable. A Verified Small Entity Statement must also be					
<b>SUBTOTAL =</b>				\$890.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. §1.492(f)).					
<b>TOTAL NATIONAL FEE =</b>				\$890.00	
Fee for recording the enclosed assignment (37 C.F.R. §1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. §§3.28, 3.31). \$40.00 per property.					
<b>TOTAL FEES ENCLOSED =</b>				\$890.00	
				Amount to be refunded:  charged:	
a. <input checked="" type="checkbox"/> A check in the amount of <u>\$890.00</u> to cover the above fees is enclosed.  b. <input type="checkbox"/> Please charge my Deposit Account No. <u>13-3402</u> in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed.  c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>13-3402</u> . A duplicate copy of this sheet is enclosed.					
<p><b>NOTE: Where an appropriate time limit under 37 C.F.R. §§1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. §1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b></p> <p>SEND ALL CORRESPONDENCE TO: Customer Number 23,599</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;">   <div style="font-size: 1.2em; font-weight: bold;">23599</div> <div style="font-size: 0.8em;">PATENT TRADEMARK OFFICE</div> </div> <div style="width: 40%;"> <div style="border-top: 1px solid black; margin-bottom: 5px;">SIGNATURE</div> <div style="border-top: 1px solid black; margin-bottom: 5px;">Anthony J. Zelano</div> <div style="border-top: 1px solid black; margin-bottom: 5px;">NAME</div> <div style="border-top: 1px solid black; margin-bottom: 5px;">27,969</div> <div style="border-top: 1px solid black; margin-bottom: 5px;">REGISTRATION NUMBER</div> </div> </div> <div style="margin-top: 10px;">         Filed: 13 FEBRURAY 2002          AJZ:kmo       </div>					

**IN THE UNITED STATES DESIGNATED/ELECTED OFFICE**

International Application No. : PCT/FR00/02136  
International Filing Date : 25 JULY 2000  
Priority Date(s) Claimed : 29 JULY 1999  
Applicant(s) (DO/EO/US) : CROIZY, Jean-Francois, et al

Title: METHOD FOR MAKING METHYL ETHYL KETONE CYANOHYDRIN

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

SIR:

Prior to calculating the national fee, and prior to examination in the National Phase of the above-identified International application, please amend as follows:

**IN THE CLAIMS:**

4. (Amended) Process according to claim 1, wherein the reaction is conducted in atmospheric pressure.
5. (Amended) Process according to claim 1, wherein the reaction is conducted at a temperature of -20 to 40°C.
7. (Amended) Process according to claim 1, wherein the reaction is conducted at a pH from 7 to 9.

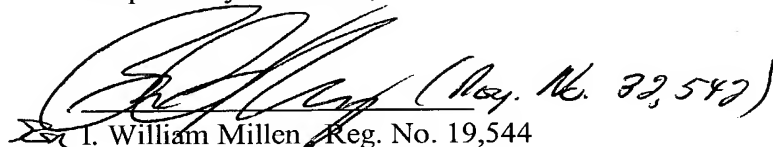
9. (Amended) Process according to claim 1, wherein the reaction is conducted with an HCN/methyl ethyl ketone molar ratio of between 0.90 and 1.10, in particular between 0.95 and 1.05.
10. (Amended) Process according to claim 1, wherein the reaction is conducted for a period of 1 to 4 hours, in particular from 1 to 2 hours.

REMARKS

The purpose of this Preliminary Amendment is to eliminate multiple dependent claims in order to avoid the additional fee. Applicants reserve the right to reintroduce claims to canceled combined subject matter.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**Version With Markings to Show Changes Made**".

Respectfully submitted,

A handwritten signature in black ink, appearing to read "I. William Millen", is written over a horizontal line. To the right of the signature, the text "(Reg. No. 19,544)" is handwritten.

I. William Millen, Reg. No. 19,544

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Filed: 2 AUGUST 2002

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

Claims 4, 5, 7, 9 and 10 were amended as follows:

4. (Amended) Process according to ~~one of claims 1 to 3~~, wherein the reaction is conducted in atmospheric pressure.
5. (Amended) Process according to ~~one of claims 1 to 4~~, wherein the reaction is conducted at a temperature of -20 to 40°C.
7. (Amended) Process according to ~~one of claims 1 to 6~~, wherein the reaction is conducted at a pH from 7 to 9.
9. (Amended) Process according to ~~one of claims 1 to 8~~, wherein the reaction is conducted with an HCN/methyl ethyl ketone molar ratio of between 0.90 and 1.10, in particular between 0.95 and 1.05.
10. (Amended) Process according to ~~one of claims 1 to 9~~, wherein the reaction is conducted for a period of 1 to 4 hours, in particular from 1 to 2 hours.

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(81) Designated countries (National): AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH,

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VN, YU, ZW.

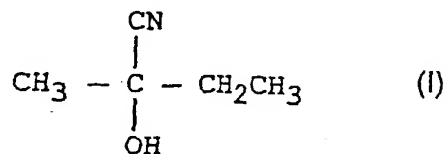
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Published:

-- With international search report.

To clarify the two-letter codes and other abbreviations, reference is made to the  
"Guidance Notes on Codes and Abbreviations" that appear at the beginning of each regular  
edition of the PCT Gazette.

(54) Title: PROCESS FOR THE PRODUCTION OF METHYL ETHYL KETONE  
CYANOHYDRIN



(57) Abstract: This process for the production of the methyl ethyl ketone cyanohydrin of  
formula (I) is characterized by the fact that hydrocyanic acid and methyl ethyl  
ketone are reacted in the presence of diethylamine as a catalyst.



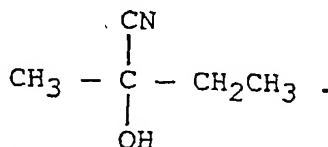
WO 01/09085

PCT/FR00/02136

10/049463

# PROCESS FOR THE PRODUCTION OF METHYL ETHYL KETONE CYANOHYDRIN

This invention relates to a process for the production of the methyl ethyl ketone cyanohydrin of the formula:



This cyanohydrin is a starting product for the production of azo polymerization triggers.

To the knowledge of the filing company, the preparation of the methyl ethyl ketone cyanohydrin is not very specifically described in literature. It is possible to simply cite Example III of International Application WO 85/00166 that describes the preparation of this cyanohydrin by reaction of the methyl ethyl ketone with sodium cyanide and hydrochloric acid in water. The drawbacks of this method are the presence of water and salt in stoichiometric amounts.

According to this invention, a process is proposed to obtain the cyanohydrin in question, with fast kinetics, whereby this process is characterized by the fact that the hydrocyanic acid and the methyl ethyl ketone are reacted in the presence of diethylamine as a catalyst.

If a comparison is made with the same reaction that is conducted with the use of a solution of soda as a catalyst, an acceleration of the reaction speed is noted as a first advantage. The second advantage that can be mentioned is that, taking into account the better activity of the diethylamine relative to the soda, it is possible to use less of it, which makes it possible to limit the subsequent supply of sulfuric acid that is necessary to neutralize the catalyst before purification of the cyanohydrin (with soda, the risk of crystallization of the Na<sub>2</sub>SO<sub>4</sub> salt is real and optionally calls for a filtration, which is not the case with a small amount of amine). It is

also possible to emphasize that it is not necessary to work in the presence of traces of water that are supplied by the soda, which prevents possible segregations and limits the contents of water and hydrolysis products in the pure cyanohydrin (formic acid).

The reagents are generally initially introduced into the reactor, and diethylamine is added there while being stirred; it is also possible to add one reagent into the other in the presence of diethylamine. The reaction is balanced.

The diethylamine is preferably introduced at a rate of  $10^{-3}$  to  $5 \times 10^{-3}$  mol, in particular at a rate of  $1.5 \times 10^{-3}$ – $3 \times 10^{-3}$  mol per mol of reagent too little (hydrocyanic acid or methyl ethyl ketone).

According to other characteristics of this invention, the reaction is conducted at atmospheric pressure at a temperature of  $-20$  to  $40^{\circ}\text{C}$ , in particular from  $-10$  to  $30^{\circ}\text{C}$  at a pH of 7 to 9, in particular from 7.5 to 8.5, with an HCN/methyl ethyl ketone molar ratio of between 0.90 and 1.10, in particular between 0.95 and 1.05, and for a period of 1 to 4 hours, in particular from 1 to 2 hours.

The purification of the cyanohydrin that is obtained consists in neutralizing the diethylamine (for example with sulfuric acid), acidifying to no longer shift the balance and eliminating the HCN and the methyl ethyl ketone (in excess or having not reacted) by distillation under reduced pressure, by conforming to the decomposition temperature of the cyanohydrin.

The following examples illustrate this invention without, however, limiting its scope.

**EXAMPLE 1** (For Comparison):

### Preparation of the Methyl Ethyl Ketone Cyanohydrin with NaOH as a Catalyst

Introduced into a double-jacket reactor of 500 cm<sup>3</sup>, previously cooled to about 0°C, are about 5 mol of pure HCN at more than 99% (about 200 ml), then the equimolar amount of pure methyl ethyl ketone at more than 99% (about 400 ml) that is previously cooled.

The mixture is stirred mechanically, kept at about 0°C, then about 500 ppm (or  $1.2 \times 10^{-2}$  equivalents) of NaOH is added in the form of an aqueous soda solution at 300 g/l. Up to 5 times more NaOH than provided for starting should be used, and the reaction should be continued because the soda solution is not completely miscible in the starting mixture.

The progress of the reaction based on the time is followed by taking samples (about 1 to 2 ml) and metering the HCN that has not reacted. At equilibrium, the conversion of the HCN is from 94.5-95%.

At the end of the reaction, the crude cyanohydrin is stabilized by adding sulfuric acid to neutralize the basic catalyst and to bring the pH to 2.

The thus stabilized crude cyanohydrin is topped and stripped with air for about 30 minutes in a rotary evaporator under 150 mbar (the free HCN that is recovered is trapped in the soda). The temperature is about 40°C to limit the thermal decomposition.

880 g of methyl ethyl ketone cyanohydrin is thus obtained.

The analyses and purities that are obtained are recorded in Table 1.

**EXAMPLE 2** (Of the Invention):

The operating procedure of Example 1 is reproduced, except that 160 ppm of pure diethylamine (or  $2.2 \times 10^{-3}$  equivalents) is used instead of the soda solution.

Thus, 950 g of the methyl ethyl ketone cyanohydrin is obtained.

The analyses and purities that are obtained are also indicated in Table 1.

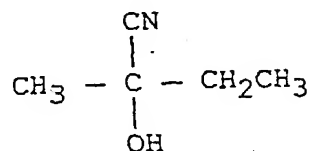
**Table 1**

Example	Purity of Methyl Ethyl Ketone Cyanohydrin (%) (1)	Water (%) (2)	Free HCN (%) (3)	Methyl Ethyl Ketone + Impurities (%) (4)	H <sub>2</sub> SO <sub>4</sub> (ppm) (5)
1 (For Comparison)	96.74	0.50	0.27	2.49	1750
2 (Of the Invention)	98.18	0.21	0.49	1.12	850

- (1) Total HCN metering (Deniges)
- (2) Karl Fischer (water that is obtained from the HCN or methyl ethyl ketone reagents and primarily from the soda in Example 1)
- (3) Charpentier-Volhard metering
- (4) Addition to 100%
- (5) Acidimetry

## CLAIMS

1. Process for the production of methyl ethyl ketone cyanohydrin of the formula:



- characterized by the fact that the hydrocyanic acid and the methyl ethyl ketone are reacted in the presence of diethylamine as a catalyst.
2. Process according to claim 1, wherein the diethylamine is introduced at a rate of  $1 \times 10^{-3}$  to  $5 \times 10^{-3}$  mol per mol of reagent too little.
  3. Process according to claim 2, wherein the diethylamine is introduced at a rate of  $1.5 \times 10^{-3}$  to  $3 \times 10^{-3}$  mol per mol of reagent too little.
  4. Process according to one of claims 1 to 3, wherein the reaction is conducted in atmospheric pressure.
  5. Process according to one of claims 1 to 4, wherein the reaction is conducted at a temperature of  $-20$  to  $40^\circ\text{C}$ .
  6. Process according to claim 5, wherein the reaction is conducted at a temperature from  $-10$  to  $30^\circ\text{C}$ .
  7. Process according to one of claims 1 to 6, wherein the reaction is conducted at a pH from 7 to 9.
  8. Process according to claim 7, wherein the reaction is conducted at a pH of 7.5 to 8.5.
  9. Process according to one of claims 1 to 8, wherein the reaction is conducted with an HCN/methyl ethyl ketone molar ratio of between 0.90 and 1.10, in particular between 0.95 and 1.05.
  10. Process according to one of claims 1 to 9, wherein the reaction is conducted for a

period of 1 to 4 hours, in particular from 1 to 2 hours.

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION  
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(74) Mandataire: **RIEUX, Michel**; Atofina, DCRD/DPI,  
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KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG,  
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Publiée:

— Avec rapport de recherche internationale.

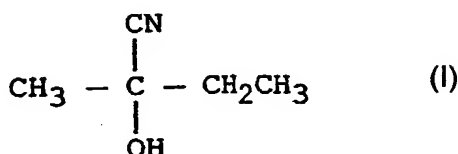
(72) Inventeurs; et

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En ce qui concerne les codes à deux lettres et autres abrévia-  
tions, se référer aux "Notes explicatives relatives aux codes et  
abréviations" figurant au début de chaque numéro ordinaire de  
la Gazette du PCT.

(54) Title: METHOD FOR MAKING METHYL ETHYL KETONE CYANOHYDRIN

(54) Titre: PROCEDE DE FABRICATION DE LA CYANHYDRINE DE LA METHYL ETHYL CETONE



(57) Abstract: The invention concerns a method for  
making ketone methyl ethyl cyanohydrin of formula  
(I) characterised in that it consists in reacting hydro-  
cyanic acid and ketone methyl ethyl in the presence  
of diethylamine as catalyst.

(57) Abrégé: Ce procédé de fabrication de la cyan-  
hydrine de la méthyl éthyl cétone de formule (I) est  
caractérisé par le fait que l'on fait réagir l'acide cyan-  
hydrique et la méthyl éthyl cétone en présence de dié-

thylamine comme catalyseur.

WO 01/09085 A1

**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY**  
(Includes Reference to PCT International Applications)ATTORNEY'S DOCKET NUMBER  
**ATOCM 252**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD FOR MAKING METHYL ETHYL KETONE CYANOHYDRIN**

the specification of which (check only one item below):

- ☐ is attached hereto.
- ☒ was filed as United States application

Serial No. 10/049,463on February 13, 2002

and was amended

on \_\_\_\_\_ (if applicable).

- ☒ was filed as PCT international application

Number PCT/FR00/02136on 25 JULY 2000,

and was amended under PCT Article 19

on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim priority benefits under Title 35, United States Code, § 119 or 365 (b) of the following United States provisional application(s) and of any foreign application(s) for patent or inventor's certificate or 365(a) of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

**PRIOR U.S. PROVISIONAL AND FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:**

COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
FRANCE	99/09859	29 JULY 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint I. William Millen (19,544); John L. White (17,746); Anthony J. Zelano (27,969); Alan E.J. Branigan (20,565); John R. Moses (24,983); Harry B. Shubin (32,004); Brion P. Heaney (32,542); Richard J. Traverso (30,595); John A. Sopp (33,103); Richard M. Lebovitz (37,067); James E. Ruland (37,432); Nancy Axelrod (44,014); Jennifer J. Branigan (40,921); Robert E. McCarthy, (46,044); and Csaba Henter (50,908) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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703/243-6333

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PATENT TRADEMARK OFFICE



**Combined Declaration for Patent Application and Power of Attorney (Continued)**  
 (Includes Reference to PCT International Applications)

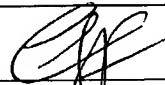
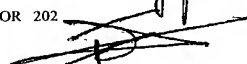
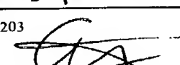
 ATTORNEY'S DOCKET NUMBER  
 ATOCM-252

1-00 201	FULL NAME OF INVENTOR	FAMILY NAME <u>CROIZY</u>	FIRST GIVEN NAME <u>Jean-Francois</u>	SECOND GIVEN NAME
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2-00 202	FULL NAME OF INVENTOR	FAMILY NAME <u>ESCH</u>	FIRST GIVEN NAME <u>Marc</u>	SECOND GIVEN NAME
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3-00 203	FULL NAME OF INVENTOR	FAMILY NAME <u>ESQUIROL</u>	FIRST GIVEN NAME <u>Gilbert</u>	SECOND GIVEN NAME
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204	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
205	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
206	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
207	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY

<b>Combined Declaration for Patent Application and Power of Attorney (Continued)</b> (Includes Reference to PCT International Applications)	ATTORNEY'S DOCKET NUMBER <b>ATOCM-252</b>
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2 0 8	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
2 0 9	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
2 1 0	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
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	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY
2 1 2	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	STREET	CITY	STATE & ZIP CODE/COUNTRY

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 	DATE 05/06/02	SIGNATURE OF INVENTOR 207	DATE
SIGNATURE OF INVENTOR 202 	DATE 05/06/02	SIGNATURE OF INVENTOR 208	DATE
SIGNATURE OF INVENTOR 203 	DATE 05/06/02	SIGNATURE OF INVENTOR 209	DATE
SIGNATURE OF INVENTOR 204	DATE	SIGNATURE OF INVENTOR 210	DATE
SIGNATURE OF INVENTOR 205	DATE	SIGNATURE OF INVENTOR 211	DATE
SIGNATURE OF INVENTOR 206	DATE	SIGNATURE OF INVENTOR 212	DATE